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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION III

841 Chestnut Building  
Philadelphia, Pennsylvania 19107

ORIGINAL  
(filed)

Kei323v

Mr. Mark Travers  
de maximus, inc.  
P.O. Box 90348  
Knoxville, TN 37990

NOV 15 1989

Re: Novak Sanitary Landfill Site  
Field Operations Plan

Dear Mr. Travers:

The Field Operations Plan (FOP) submitted on September 14, 1989 on behalf of the Novak Sanitary Landfill PRP Group has been reviewed. Although revisions are requested, the Environmental Protection Agency (EPA) is pleased to inform you that the FOP has been conditionally approved.

EPA has decided to conditionally approve the document because the requested revisions are not substantial and should not cause delay of the implementation of the Remedial Investigation and Feasibility Study (RI/FS) at the Novak Site. The requested revisions are detailed in the attachment to this letter. Because the document is conditionally approved, you may begin implementation of the RI/FS while you are revising the FOP according to the attached comments. If you choose to revise the FOP before implementing the RI/FS, please notify me as soon as possible and submit the requested revisions within the 45-day time period set forth in the Consent Order. If you, Geraghty & Miller, or the Novak PRP Group disagree with any of the requested revisions please contact me so we can arrange a meeting or teleconference to discuss any issues.

In general, the document was well written and is well detailed. Although the number of comments may seem excessive, I believe you will find that most of them can be quickly addressed. You will also note that a few of the requested revisions are not consistent with the EPA-approved RI/FS work plan. Please review these comments closely and respond as appropriate.

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Along with the requested revisions I have outlined some additional work which I urge you to consider during the RI/FS. I believe that the information I have outlined, if collected, will facilitate your assessment of risk posed by the Novak Site. It has been my experience that similar information is usually lacking in RI/FS reports necessitating additional studies or broad assumptions. It has also been my experience that this information is not typically collected during the RI/FS.

Three copies of the FOP were sent to the Commonwealth of Pennsylvania for review and comment. No comment was received as of Novemebr 14, 1989.

Sincerely,



Michael Towle  
Remedial Project Manager

cc: Lawrence Diamond,  
Hannoch Weisman  
Joseph Donovan, EPA  
Bruce Beach, Dynamac  
Ronald Klinikowski, PADER

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ATTACHMENT

ORIGINAL  
(KSC)

NOVAK SANITARY LANDFILL SITE  
FIELD OPERATIONS PLAN  
REQUESTED REVISIONS

NOTE: Items marked by (+) are not addressed within EPA-approved RI/FS work plan. However, if the referenced information is needed and is not collected before the RI Report is prepared, a potentially serious data gap may occur.

1. QAPP, Title and Signatures: Michael T. Towle
2. QAPP, Section 8.0, Calibration Procedures: Please list here all instruments for which calibration procedures are discussed in FSP Appendix I (discussion here is not necessary). Include precipitation gauge.
3. QAPP, Section 15.0, Corrective Action: Geraghty & Miller should provide a means to document "field" corrective action procedures. The Field Team Leader and/or Project Manager should be notified of any problems requiring corrective action. Procedure needed to ensure that all deviations from approved Work Plan and Field Operations Plan are documented. Ensure conformance with Administrative Order by Consent.
4. QAPP, Appendix A.: Identify Sample Coordinator.
5. QAPP, Appendix A., Table 7.1: Maximum holding time for mercury is 26 days. Maximum holding time for cyanide is 12 days.
6. QAPP, Appendix A., Table 7.1: In accordance with EPA Region III QA Directive (copy attached), revise Table 7.1.
7. QAPP, Appendix B.: EPA Community Relations Coordinator is Barbara Brown. Mike Towle's middle initial is T. Identify Sample Coordinator.
8. QAPP, Appendix C.: Include a form or log to record corrective action measures.
9. FSP, Section 3.0, Sample Designations: Sample designation number should include a 2-digit sample number. (Just in case !)
10. FSP, Appendix A.: Information collected during the Site Reconnaissance must include all information listed in the RI/FS Work Plan, Section 3.1.1. FSP, Appendix A, does not include all information detailed in the RI/FS Work Plan.

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11. FSP, Appendix B.: PADER records should be searched as a primary source to identify private wells in the vicinity of NSL instead of used as a comparison only.

12. FSP, Appendix B.: If possible, at least one volume of well water should be evacuated from each residential well before sampling. If well volume can not be determined or estimated, purge time should be maximized, i.e., 10 minutes instead of 5 minutes. Ideally, well should be discharged until temperature, pH and conductivity stabilize.

13. FSP, Appendix B.: Residential well piping system sketch and description should include type of pipes (e.g. copper) and solder (e.g. lead), if possible.

14. FSP, Appendix B.: Please include a space on the well survey to identify the individual filling out the form.

15.(+) FOP, FSP, Appendix B.: Residential well water should be sampled for TCL non-volatile organic compounds if such compounds are found in the on-site ground water wells and may migrate to the residential wells.

16. FSP, Appendix B.: Location of sampling point (especially with respect to pressure tank) should be identified on the sketch.

17. FSP, Appendix B. and other aqueous sample collection activities: Field samplers must ensure that samples collected for VOC analysis do not contain trapped air bubbles, i.e., headspace must be minimized.

18. FSP, Appendix C. and other solid matrix sample collection activities: To the maximum extent practicable, field samplers should ensure that no headspace (airspace) exists within soil sample containers being shipped for VOC analysis. If volatile organic chemicals (VOC) exist within the soil, a high percentage of VOC will enter the airspace and be lost from the sample jar when it is uncapped in the laboratory. Alternatively, selected samples or duplicate samples can be prepared using the "methanol method".

19. FSP, Appendix C.: Soil to be sampled and analyzed for VOCs (based on elevated Hnu readings) should be placed in the sample container immediately upon retrieval and confirmation of elevated Hnu readings. EPA strongly recommends that soil from each interval with positive VOC readings be prepared for laboratory analysis of VOC. After the unconsolidated boring is completed, and if elevated Hnu readings are recorded, Geraghty & Miller should send the highest and the deepest contaminated sample to the laboratory for VOC analysis. See comment #18 above.

20. FSP., Appendices D. and E.: A grout apron should be constructed around each well.

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21. FSP., Appendix D.: Sand pack should not extend more than 2 feet above the screen. Applies to Appendix E. as necessary, i.e., if a bedrock well requires a screened interval due to collapse, etc..

22. (+) EPA recommended the use of borehole geophysics and packer testing to identify discrete flow zones and zones of contamination in the open borehole wells (see EPA letter of May 3, 1989). On May 18, 1989, EPA met with the PRP technical group. At that meeting, Geraghty & Miller suggested that much of the information obtained from well logging could be obtained during well drilling. Geraghty & Miller suggested that the open boreholes could be revisited and tested later, if needed, since they would remain open hole wells.

EPA agreed with open borehole construction of the wells and further concurred with Geraghty & Miller's approach. However, EPA continues to be concerned about the vertical distribution of contamination in the aquifer and the possibility for open borehole wells to cross contaminate the aquifer. Because the possibility of cross contamination, etc. will not be determined during the field investigation, EPA requests that the FOP must propose a borehole investigation contingency plan which will be implemented in the event that an open borehole well is found to be contaminated. This plan must propose a course of action, e.g., geophysical testing, packer testing, discrete sampling, retrofitting, etc., for wells which may act to cross contaminate the aquifer beneath the site. EPA will not allow newly constructed wells to potentially exacerbate a contamination problem.

EPA further suggests that information on the vertical distribution of contamination in contaminated wells, if any, should be characterized before the FS in order to select an appropriate remedy, if needed. The borehole investigation contingency plan should be implemented, if needed, upon receipt of ground water sampling data from the open borehole wells. The needed field work should proceed quickly to avoid a delay in the RI/FS schedule.

23. FSP, Appendix F.: A timetable for collection of continuous water-level data should be developed. How often will accumulated precipitation be measured in the rain gauge. Please develop a schedule.

24. EPA Split Sampling (FSP., Appendix G and other): According to recent EPA Central Regional Laboratory policy, preservatives for PRP and EPA split samples should come from the same batch. EPA requests that PRP's field team bring preservatives for EPA split samples. EPA will provide Project Coordinator and Project Manager with oversight work plan or similar document identifying number and location of EPA oversight split samples.

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EPA requests that Project Manager and Field Team Leader communicate with EPA Remedial Project Manager and/or EPA's oversight contractor to assist in coordination of EPA oversight split sampling and other field activities. EPA will provide Project Coordinator and Project Manager with appropriate contacts and oversight work plan.

25. FSP, Appendix G.: How will purge water and other liquid wastes be handled? See General Comment 1.

26. FSP, Appendix G.: EPA recommends that Geraghty & Miller also measure pH and specific conductivity, in addition to temperature, to maximize the representativeness of the sample.

27. (+) FSP, Appendix H. and Appendix C.: Collection of surface soil samples and subsequent analysis for full TCL/TAL is very important for the risk assessment. Analysis of soil/sediment for full TCL constituents only in areas of possible contaminant migration (e.g. drainageways) may bias the numbers for the risk assessment. Surface soil samples should also be collected from the locations of the unconsolidated borings and should be analyzed for TCL constituents.

#### GENERAL COMMENTS

1. How will wastes, i.e., used gloves, rinsate water, drill cuttings, pump purge water, etc. be disposed? In light of PRP Group's current concern about demolition wastes disposed in the landfill as part of PADER closure, an appropriate method of disposal, especially aqueous, should be determined in the FOP.

2. Schedule: EPA requests that a more detailed schedule indicating start dates and completion dates for each RI/FS task be prepared for this project upon approval of the FOP. This schedule will assist EPA and PRP Group coordinate field activities and oversight. The schedule approved in the RI/FS work plan will remain as the schedule enforceable by the Consent Order.

3. The procedure and filtering apparatus using the 0.45 micron filter should be described.

4. PADER well location concerns: During EPA's meeting with PADER, the PADER hydrogeologist made the following comment. Monitoring well MW-9 should be moved closer to the intersection of the two fractures south of its current location. Monitoring well MW-7 should be moved closer to the fracture trace.

5. Background soil samples should not be located near access roads to the landfill.

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#### ADDITIONAL WORK FOR CONSIDERATION

If contamination is found in surface soil, leachate, etc., steps should be initiated during the RI to estimate the potential for leaching of these contaminants to ground water. This work will facilitate the assessment of risk posed by the site.

Employ a fate and transport model, leach model, or other appropriate sampling strategy to estimate the degree of organic contamination or other contamination which could migrate to ground water. Without direct knowledge of the amount of contamination, if any, in the soils beneath the landfill, a model or other suite of calculations must be used to estimate the threat to ground water posed by the concentrations of contaminants, if any, found in surface soil, leachate, etc.

Similarly a quick test may be employed to determine if metals are available to leach to ground water. An ASTM "Shake Test", "batch test" or similar test, could be utilized to determine if metal-contaminated soil poses a risk to ground water.

**ESD**

**EPA  
REGION III  
QA DIRECTIVES**

**HWMD**

Bulletin No. OAD007

Date: July 11, 1989

**AQUEOUS SAMPLE PRESERVATION FOR VOLATILE ORGANIC COMPOUNDS (VOC) ANALYSES**

The purpose of this directive is to define appropriate times to preserve AQUEOUS samples for VOC analysis, and to suggest techniques for the preservation. There are two reasons to preserve samples for VOCs: 1) to remove residual chlorine and 2) to stop bio-degradation. Unless the water source is chlorinated, the presence of residual chlorine is unlikely. Very few Superfund sites are concerned with chlorinated water supplies. In contrast, aromatic compounds (benzene, toluene, etc.) are often a concern at Superfund sites. Bio-degradation becomes an issue due to holding times. If samples are unpreserved, the technical holding time for VOC analysis per the Federal Register is limited to 7 days for aromatic and 14 days for non-aromatic compounds. If preserved, the holding time for aromatics is extended to 14 days. Since the CLP SOW contractual holding time is 10 days from sample receipt, the technical holding time may have expired before a contractually compliant analysis is completed. If the VOC contaminants of concern are only the chlorinated hydrocarbons (TCE, PCE, etc.), then qualifiers on the aromatic compounds for expired holding times are inconsequential. If the aromatics are of concern, preservation may be critical for data integrity.

Once the need to preserve VOCs (in addition to keeping them at 4° C) is established, the preservation technique must be selected. Ascorbic acid is used to remove chlorine in order to inhibit creation of trihalomethanes and other chlorinated compounds (false positives). Hydrochloric acid (HCl) is used to stop destruction of aromatics (false negatives). If both types of preservation are needed, the residual chlorine must be removed BEFORE HCl is added. Region III currently recommends two preservation techniques to retard bio-degradation and one for removing residual chlorine. They are presented below with some general instructions. All preservation techniques used for a project must be defined in your QAPJP and discussed with RSCC when scheduling samples. The type of preservation must also be noted on the Sample Shipping Log for those samples sent through RSCC.

**GENERAL INSTRUCTIONS**

1. When filling the vials, avoid passing air through the sample.
2. When preservation is completed, seal the vial then invert it to ensure no air bubbles are present.
3. Label and package for shipping according to the instructions in the User's Guide to the Contract Laboratory Program, December 1988.

**GENERAL QUALITY CONTROL**

1. Collect 4 to 6 vials at each location (see below for guidance). Verify the preservation(s) worked on extra vial(s) from each of the sample locations. Discard the tested vials. Record the verification results in a field notebook.
2. Trip blanks which accompany VOC samples must be preserved using the same preservation technique(s) as the samples.
3. Use narrow range (0 to 4) pH paper to measure pH.

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## SUPPLIES

1. Ultrapure (better than reagent grade) hydrochloric acid (HCl)  
1:1 solution
2. Number of 40 ml vials needed at each sample location:
  - a) chlorine removal only: 5 vials
  - b) chlorine removal and pH adjustment: 6 vials
  - c) pH adjustment only: 4 vials
  - d) no preservation: 3 vials
3. A.C.S. grade ascorbic acid
4. Hach DPD kit (use the total residual chlorine pillows)
5. Disposable Pasteur pipettes

## PROCEDURES

### RESIDUAL CHLORINE REMOVAL (with or without pH adjustment)

1. For each sample location suspected of containing residual chlorine, check a practice sample with a Hach DPD kit. Discard the sample.
2. If residual chlorine is detected in step 1, add 25 mg ascorbic acid to four (five if pH adjustment is also needed) empty 40 ml sample vials. Immediately after collecting a fresh sample, fill the vials. Invert closed vials to mix.
3. Verify removal of the residual chlorine with the Hach DPD kit using one of the vials. Discard the vial. NOTE: effective removal of the chlorine must be verified before HCl is added.
4. If preservation for aromatics is also needed (see discussion on page 1), add 2-3 drops of 1:1 HCl to all four remaining vials using a new Pasteur pipette. Ensure that the acid reaches the sample (does not run down the side of the vial), then invert closed vials to mix and check for bubbles.
5. Verify pH is <2 using one of the four vials. If pH <2, discard the tested sample. If pH is not <2, then repeat steps 4 and 5.

- NCr:

### HCL PRESERVATION ONLY

#### Technique #1

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1. Add 2-3 drops of 1:1 HCl to an empty 40 ml vial.
2. Fill the vial with sample. Invert closed vial to mix, then check with pH paper. If pH is not <2, add additional HCl. Record the amount of acid needed to get the pH to <2 in the field notebook. Discard the sample.
3. Add the needed amount of HCl to three vials. Immediately after collecting a fresh sample, fill the three vials. Avoid excessive overflow of the sample when filling. Invert closed vials to mix and check for bubbles. NOTE: Adding water to acid may cause "gassing" to occur, and some VOCs may be lost.

#### Technique #2

1. Fill a vial with sample, then add 2-3 drops of 1:1 HCl using a new Pasteur pipette. Invert closed vial to mix, then check with pH paper. If pH is not <2, add additional HCl. Record the amount of acid needed to get the pH to <2 in the field notebook. Discard the sample.
2. Immediately after collecting a fresh sample, fill three vials. Add the needed amount of 1:1 HCl to each of the vials using a new Pasteur pipette. Ensure that the acid reaches the sample (does not run down the side of the vial), then invert closed vials to mix and check for bubbles.

### GENERAL INFORMATION

1. If well recovery is very slow and two bailers cannot be obtained in a reasonable time period, then fill and cap all the needed vials with the first sample. Proceed with the above techniques, but open the vials briefly to add the preservatives.
2. HCl is corrosive to laboratory equipment, so add the minimal amount that will effectively preserve the samples.

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